

Louisville Metro Air Pollution Control District
850 Barret Ave., Louisville, Kentucky 40204
20 April 2013

Construction Statement of Basis

Company: Waste Management of Kentucky's Outer Loop Recycling and Disposal Facility (OLRDF)

Plant Location: 2673 Outer Loop Road, Louisville, Kentucky 40219-3547

Date Application Received: 19 December 2007 **Application Number:** 10796

Public Comment Date: 17 January 2013
20 April 2013

Proposed Permit Date: 17 January 2013
20 April 2013

District Engineer: Chris Gerstle

Permit No: 422-08-C (R2)

Plant ID: 0532

SIC Code: 4953

NAICS: 562212

AFS: 00532

Introduction:

This permit will be issued pursuant to District Regulation 2.03, Permit Requirements - Non-Title V Construction and Operating Permits and Demolition/Renovation Permits. Its purpose is to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for particulate matter less than 2.5 microns (PM_{2.5}).

Application Type/Permit Activity:

☐ Initial Issuance

☒ Permit Revision

☐ Administrative

☐ Minor

☒ Significant

☐ Permit Renewal

Compliance Summary:

☒ Compliance certification signed

☐ Source is out of compliance

☐ Compliance schedule included

☒ Source is operating in compliance

I. Source Information

1. **Project Description:** Landfill expansion
2. **Process Description:** Landfill gas is produced as a result of non-hazardous solid waste decomposition. The process includes a solid waste disposal facility having the meaning defined in 40 CFR 60.751 pertaining to all contiguous land and structures, other appurtenances (including haul roads, future cells within the units defined in Landfill Gas Collection and Control System Design Plan and the management of leachate) and the improvements on the land used for the disposal of solid waste in addition to other waste management practices such as solidification, bioremediation and the insignificant activity of composting.

The source receives municipal solid waste which is then disposed of in a landfill. Landfill gas is produced as a result of waste decomposition. Leachate from the landfill is collected and processed in the sequential batch reactor (SBR) pre-treatment facility. Contaminated material is stockpiled and aerated in a closed loop setup to allow microorganisms to degrade the organic contamination. Liquid waste goes through a solidification process before being placed in the landfill. A paint booth is used for painting disposal bins or boxes located at customer businesses.

3. **Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Municipal Solid Waste Landfill (MSWL) with Three (3) Open Flares and Landfill Gas (LFG) Treatment System
U6	Truck Traffic

5. **Fugitive Sources:**

Truck traffic
Landfill construction

6. **Permit Revisions:**

Revision No.	Issue Date	Public Comment Date	Type	Page No.	Description
N/A	6/24/2008	NA	Initial	Entire Permit	Initial Permit Issuance
R1	5/21/2009	NA	Revision	Entire Permit	Correct typographical errors Establish an alternative monthly maximum emissions limit for CO and PM

Revision No.	Issue Date	Public Comment Date	Type	Page No.	Description
R2	Click here to enter a date.	1/17/2013	Revision	Entire Permit	Removed/corrected the PM ton per year limit Revised the CO plant-wide limit Revised the dust suppression language
		4/20/2013	Revision	Entire Permit	Change the STAR TAC limits

7. Emission Summary:

Pollutant	Actual Emissions (tpy) 2011 Data	Pollutant that triggered Major Source Status (based on PTE)
VOC	44.53	No
CO	110.86	Yes ¹
NO _x	20.37	No
SO ₂	5.84	No
PM ₁₀	51.15	Yes
Total HAPs	19.61	Yes
Single HAP > 1 tpy	Ethyl Benzene Hydrochloric Acid, Toluene; Xylene	No

Note¹: Major for Title V, limit taken to not be major for pollutant for PSD.

8. Applicable Requirements:

☒ PSD ☒ 40 CFR 60 ☒ 40 CFR 63 ☒ SIP
☒ NSR ☒ 40 CFR 61 ☒ District-Origin ☐ Other

9. MACT Requirements: The source has no future MACT requirements.**10. Referenced Federal Regulations in Permit:**

40 CFR 60, Subpart WWW Standards of Performance for Municipal Solid Waste Landfills
 40 CFR 61, Subpart M National Emission Standard for Asbestos
 40 CFR 63, Subpart AAAAA National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

II. Regulatory Analysis

- Acid Rain Requirements:** The source is not subject to the Acid Rain Program.
- Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
- Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR

Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.

- 4. 40 CFR Part 64 Applicability Determination:** The source is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.

5. Basis of Regulation Applicability

a. Plant-wide

OLRDF is a major source for CO, PM₁₀, and combined HAPs. Regulation 2.16 - *Title V Operating Permits* establishes requirements for major sources.

Regulations 5.00, 5.01, 5.20, 5.21, 5.22 and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

The source submitted a revised STAR EA Demonstration for applicable TACs on February 26, 2013. Outer Loop has demonstrated that the plant-wide TAC emissions are either de minimis or compliant with STAR EA goals yielding a cumulative maximum cancer risk of 0.79 using QUASAR modeling.

b. Applicable Regulations

Regulation	Title	Type
2.03	Permit Requirements - Non-Title V Construction and Operating Permits and Demolition/Renovation Permits	SIP
2.05	Prevention of Significant Deterioration of Air Quality	SIP
5.00	Definitions	Local
5.01	General Provisions	Local
5.02	Adoption and Incorporation by Reference of National Emissions Standards for Hazardous Air Pollutants	Local
5.14	Hazardous Air Pollutants and Source Categories	Local
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant	Local
5.21	Environmental Acceptability for Toxic Air Contaminants	Local
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant	Local
5.23	Categories of Toxic Air Contaminants	Local
6.45	Standards of Performance for Existing Solid Waste Landfills	SIP
7.02	Adoption of Federal New Source Performance Standards	Local
40 CFR 60 Subpart A	General Provisions	Federal
40 CFR 60 Subpart WWW	Standards of Performance for Municipal Solid Waste Landfills	Federal
40 CFR 61 Subpart M	National Emission Standard for Asbestos	Federal
40 CFR 63 Subpart AAAAA	National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills	Federal

c. **Basis for Applicability**

Regulation	Basis for Applicability
2.05	The potential uncontrolled CO emissions are greater than 40 tons per year.
2.03	This regulation establishes the construction permit requirements of the District.
5.02	Adoption and Incorporation by Reference of National Emission Standards for Hazardous Air Pollutants
6.45	Each existing and operating solid waste landfill
7.02	Adoption of Federal New Source Performance Standards
40 CFR 60 Subpart A	General Provisions
40 CFR 60 Subpart WWW	The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991.
40 CFR 61 Subpart M	The provisions of this subpart are applicable to those sources for active waste disposal sites.
40 CFR 63 Subpart A	These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.
40 CFR 63 Subpart AAAA	Applies to all owners or operates a MSW landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition that includes a bioreactor and is a major source.

d. **Emission Unit U1 – Municipal Solid Waste Landfill (MSWL)**i. **Equipment:**

Emission Point	P/PE	Capacity	Installation Date	Applicable Regulation
E-1	Open Flare #1; Parnel Biogas, Inc.	109.2 MMBtu/hr, 4000 scfm	2008	5.00, 5.01, 5.02, 5.20, 5.21, 5.22, 5.23, 6.45, 7.02 40 CFR 60 Subpart WWW 40 CFR 61 Subpart M 40 CFR 63 Subpart AAAA
E-2	Open Flare #2; Parnel Biogas, Inc.	109.2 MMBtu/hr, 4000 scfm	2008	
E-3	Open Flare #3; LFG Specialties, LLC	128 MMBtu/hr, 4200 scfm	1994	

ii. **Standards/Operating Limits**1) **CO**

(a) Permit 422-08-C (R1) contains the following requirement in order to avoid complying with Regulation 2.05, the company requested the 234 tons per year pre-Unit 8 expansion limit as a PSD avoidance limit.

(b) Permit 422-08-C (R1) contains the following requirement in order to avoid applicability of Regulation 2.05, the company

requested the 249 tons per year limit for the Unit 8 expansion as a PSD avoidance limit.

2) **Opacity**

Regulation 40 CFR 60.18 contains general control device and work practice requirements.

3) **NMOC**

(a) Regulation 6.45 requires landfills to design a collection system that shall effectively capture the gas that is generated from the landfill to less than 167 tpy NMOC.

(b) Regulation 40 CFR 60 Subpart WWW sets forth timetables for gas collection, operating wellhead parameters, and surface methane concentrations.

The Non Methane Organic Compounds (NMOC) emission rate report was received by the District on May 30, 1996. The facility's initial design capacity report was submitted by May 30, 1997. A revised NSPS Landfill Gas Collection and Control Design Plan was received by the District on January 10, 2010 as required. A final revision was submitted August 6, 2012. This report also includes the acceptable pressure measurements below the geomembrane.

4) **Asbestos**

Regulation 40 CFR 61 Subpart M requires asbestos containing material to be daily covered with non-asbestos containing material and a resinous or petroleum-based dust suppression agent.

5) **HAP**

Regulation 40 CFR 63 Subpart AAAA requires each new landfill cell to be connected to the collection and control system prior to initiating liquids addition in that area.

The bioreactor areas in Units 5 and 7 are part of a research and development project between Waste Management and the United States Environmental Protection Agency performed under a Cooperative Research and Development Agreement (CRADA).

6) **TAC**

The Environmental Acceptability demonstration was based upon an annual waste disposal rate of 1,000,000 tons of municipal solid waste, therefore this rate serves as an alternative measure as required by Regulation 5.21, section 4.3.

iii. **Monitoring and Record Keeping**

1) **CO**

Regulation 2.16, sections 4.1.9.1-2 establish monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

CO emissions will be calculated using the following equation:

Monthly CO = Monthly Landfill Gas Generation (MMCF/month)
× 0.37 lb/MMBtu × 1,012 MMBtu/MMCF × 1 ton/2000 lb × 50%
methane

2) **Opacity**

Regulation 2.16, sections 4.1.9.1-2 establish monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

3) **NMOC**

(a) District Regulation 6.45's monitoring requirements are duplicated in 40 CFR 60 Subpart WWW.

(b) Regulation 40 CFR 60 Subpart WWW sets forth monitoring procedures for surface emission monitoring, and the gas collection and control system.

4) **Asbestos**

Regulation 40 CFR 61 Subpart M requires specific records when asbestos containing material is received.

5) **HAP**

Regulation 40 CFR 63 Subpart AAAAA requires the non-leachate liquids in the bioreactor to meet specific percent moisture content.

6) **TAC**

Regulation 2.16, sections 4.1.9.1-2 establish monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

iv. **Reporting**

1) **CO**

Regulation 2.16, sections 4.1.9.3 establishes reporting to ensure ongoing compliance with the terms and conditions of the permit.

2) **Opacity**

Regulation 2.16, sections 4.1.9.3 establishes reporting to ensure ongoing compliance with the terms and conditions of the permit.

3) **NMOC**

(a) District Regulation 6.45 does not require any specific reporting requirements for NMOC, however, Regulation 2.16, section 4.1.9.3 requires sufficient reporting to ensure ongoing compliance with the terms and conditions of the permit.

(b) Regulation 40 CFR 60 Subpart WWW sets forth reporting requirements when monitored parameters have exceedances.

4) **Asbestos**

Regulation 40 CFR 61 Subpart M requires instances of improperly covered waste, discrepancies between shipment records and actual quantities and if asbestos-containing waste

material will be excavated be reported to the District.

5) **HAP**

(a) Regulation 40 CFR 63 Subpart AAAA requires actions taken to be reported if the SSM plan is not followed.

(b) Federal Regulation 40 CFR 63.1980(a) requires the annual report described in 40 CFR 60.757(f) to be submitted semi-annually.

6) **TAC**

Regulation 2.16, sections 4.1.9.3 establishes reporting to ensure ongoing compliance with the terms and conditions of the permit.

e. **Emission Unit U6 – Truck Traffic**

i. **Equipment:**

Emission Point	P/PE	Capacity	Installation Date	Applicable Regulation
E-8	Fugitive dust from truck traffic	NA	1969	N/A

ii. **Standards/Operating Limits**

PM

Permit 422-08-C (R1) requires periodic dust suppression.

iii. **Monitoring and Record Keeping**

PM

Regulation 2.16, sections 4.1.9.1-2 establish monitoring and record keeping to ensure ongoing compliance with the terms and conditions of the permit.

PM emissions will be calculated using the following equation:

$$PM = E \text{ (Emission Factor, lb/VMT)} \times VMT \text{ (miles)} \div 2000 \text{ (lb/ton)} \times 15\%$$

iv. **Reporting**

PM

Regulation 2.16, section 4.1.9.3 requires reporting to ensure compliance with the terms and conditions of the permit.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operational flexibility for the emission point.
5. **Compliance History**

Date	Regulation Violated	Result
5/23/1995	Reg. 2.03, Section 6.1, Permit Conditions Not in Accordance With Application	Settled
1/1/2007	Reg. 5.21, Section 4.1, Environmental Acceptability Demonstration	Agreement
8/25/2009	Reg. 2.03, Section 5.2, Permit Conditions: Binding	Agreement
6/29/2011	Reg. 1.14, Section 2.4, Fugitive: Visible Past Property Line	Settled

6. **Emission Factors:** The following emission factors shall be used unless more accurate District approved emission factors become available.

Emission Unit	Pollutant	Emission Factor	Unit
U1 – Landfill flare	CO	0.37	lb/MMBtu
U1 – Landfill flare	NO _x	0.068	lb/MMBtu

7. **Insignificant Activities:** There are no insignificant activities contained in the construction permit
8. **Permit Fee:** The construction permit fee for this revision is being waived because the District is correcting the CO limits and removing the PM limits which should not have been applicable.